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SOUTHEAST EDITION NOVEMBER 1960

electricity on the farm

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BLACKS

Heat lamps provide welcome warmth in this remodelled milking parlor. (See page 4 for other new features)

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No. 1 Southeast Red Edition

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EoF SOUTHEAST EDITION

electricity on the farm

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For the Children's Sake

When we read about Abraham Lincoln's early years, we find frequent reference to the fact that he would walk long distances to borrow a book and then read it by the light of a pine of lightwood knot.

Few youngsters today have ever read by a lightwood knot. We can be thankful for progress that has made this unnecessary. Still, there are far too many homes which either do not have a designated place for children to do their reading and homework, or the place that they do have is not properly lighted. One way to encourage reading and study is to provide favorable conditions for it.

If your children do not have a study center, why not build one? On page 29, you will find some suggestions that may provide just the idea you need. If your children are ambitious FFA or 4-H club members, building a study center is a worthwhile project in several respects.

AL MORRIS

Treat Your Water Pump Right

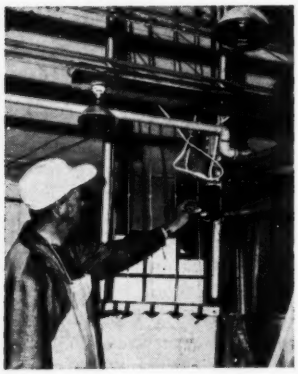
How long since the last time you "serviced" your electric water pump? We'll wager it's probably been a good while—maybe not since it was installed or last repaired. We'd never think of letting our automobile go month after month without some care. As a matter of fact it probably wouldn't continue to run if we didn't lubricate it, change filters, adjust spark plugs and points and do many other minor service jobs. But when it comes to the water pump, people have a tendency to just put it in the well and forget it. A pump is every bit as much a precision piece of machinery as an automobile. And it deserves some "servicing" attention too now and then.

We are beginning on page 12 of this issue a series of articles that will help you to better understand how your pump works, why it may need some periodical attention and adjusting, and how you should care for it. We also plan to bring you some up-to-date information on how to select the pump or pumps that will best satisfy needs.

HUGH HANSEN

No. 1 Southeast Red Edition

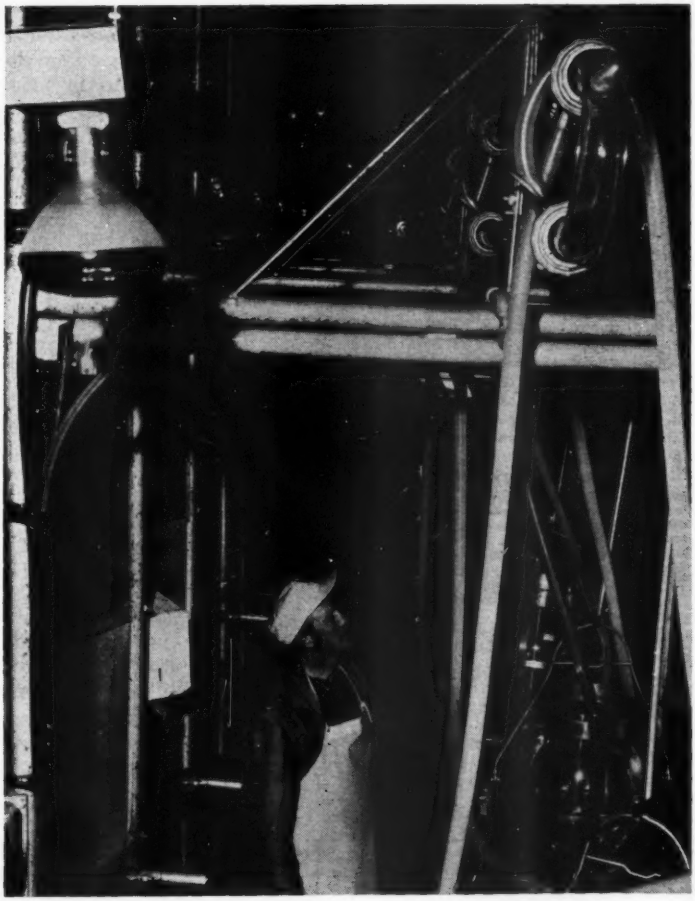
COVER STORY



Six of the heat lamps are controlled by this thermostat. When milking is finished, Messersmith sets it at 33° for protection against freeze-ups.

To milk more cows with less effort . . .

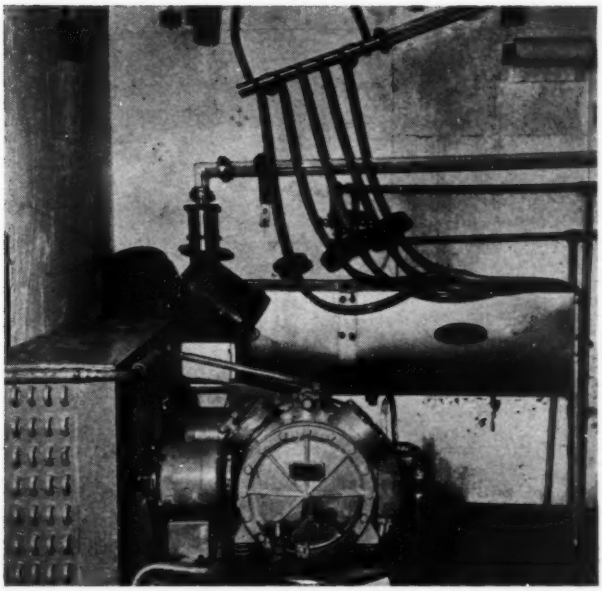
Modernize your



Rows of 250-watt heat lamps above each side of the pit are for operator's comfort in Messersmith's herringbone parlor. Lamps are hard glass type that will not break if splattered with water.

By ALBERT MORRIS, JR.

ur milking parlor



Heat from 3 hp air-cooled compressor for bulk milk tank warms the milk room. In summer, compressor can be covered and vented through outside wall.

IN APRIL, 1959, John Messersmith converted his 6-stanchion milking parlor to a double-5 herringbone. The changeover, made within the framework of the original building, cost him about $6000. Here is how the investment is paying off.

He has doubled his milking herd—now has 50 cows. Milking time per cow has been halved. From the standpoint of physical exertion, Messersmith says he now milks twice the number of cows with half the work that the stanchion barn required.

Plans to Double Herd Again

What's more, the new system opens the door to further expansion. The Woodlawn, Virginia dairyman talks in terms of again doubling his herd. He can do it without making any changes in the milking setup.

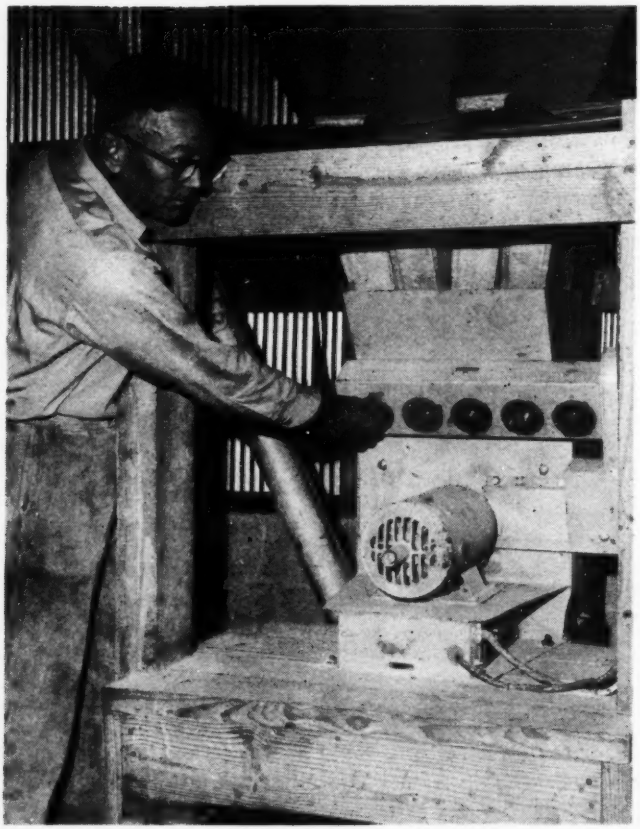
A big part of the labor saved is in feed handling. The herringbone gives him a completely automated system. Feed is delivered by the dealer into a bulk bin that stands just outside the dairy barn. Augers then move it to the milking stalls. At milking time, Messersmith dispenses it to individual cows in whatever amount he wishes by simply pulling a cord.

The compactness of the herringbone system has led some folks to describe it as tailor-made for the operator's convenience. Cows are angled away from the pit so that they stand closer together than in other parlors. There is little lost motion and the operator takes fewer steps.

Heat Lamps for Comfort

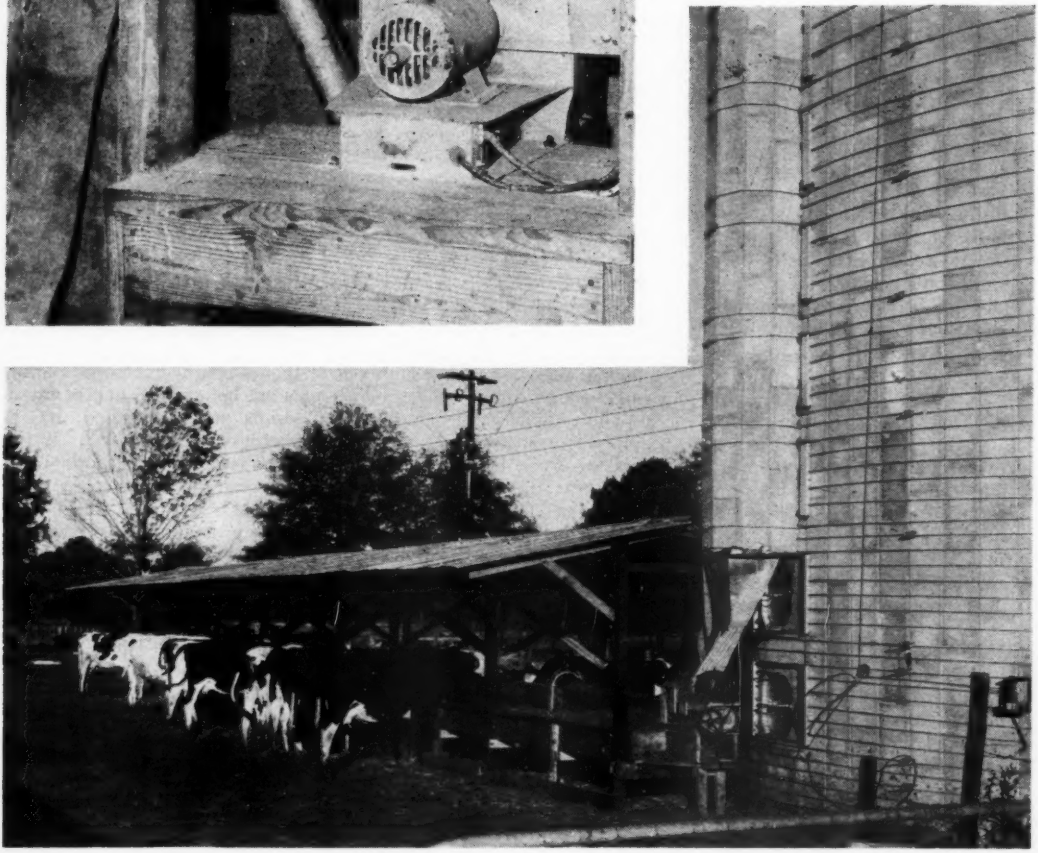
The operator's comfort also is considered in Messersmith's parlor. A row of heat lamps installed above either side of the pit keeps him warm in a cold parlor. There are six lamps on each side, spaced 40 inches apart. When the parlor is not being used, half of these lamps are controlled by a thermostat set at 33°. If inside temperature drops near freezing, the lamps come on to protect against freeze-ups. This protection was effective right through last winter's extreme cold.

Messersmith uses the 250-watt, hard-glass, moisture-resistant lamps. These will not break if water is splashed on them. The 12 lamps operate an hour for the cost of 3 KWHrs of electricity. □ □



Automatic feed-making system turns out . . .

40-Cow Ration



In 40 Minutes

Grinding and mixing the feed for his dairy herd is nothing new for L. E. Tate of Browns, Alabama. But his push-button system is new. It moves grains and supplement from storage bins and delivers them to the milking parlor as a correctly ground and mixed feed.

The 40 Holsteins in the milking herd get 1000 pounds of feed per day. Using a 5/16-inch screen in the 2 hp mixer-grinder, Tate is able to deliver this amount in 40 minutes.

Results of this continuous flow system are many. First, the cows get freshly-ground feed daily. The labor requirement at milking time is reduced. And the one day per week that two men formerly spent in grinding, mixing and handling feed can be used for other jobs.

Aerates Stored Grain

Tate has two 2000-bushel bins with perforated floors that permit drying or aeration of grain with a 5 hp fan. In these bins he keeps home-grown oats and corn that he buys. Augers operated in series move the grains to bins above mixer-grinder.

A third, 3-ton, metal bin is used for concentrate storage. The concentrate is bought in pelleted form, Tate explains, because the pellets work better in his system. By watching the grain market, buying when prices are favorable for him and processing his own feed, Tate figures that he saves $20 per ton.

Built 1100-Ton Silo

In addition to the new processing system, he has installed a 28 x 50-ft. silo that he believes to be the largest in Alabama. It has a capacity of 1100 tons. The mechanical unloader has two electric motors, one 7½ hp and the other 1 hp. Once unloaded, the silage is augered out to the cows in a 70-ft. bunk feeder.

Mechanization, declares Tate, has opened the door for expansion of his herd. The same two men who have been handling 35 to 40 cows through the years could now take care of 150, he figures. More important, however, is the fact that they have gained additional time to put on other farm jobs which were being neglected. □ □

Bins holding grain and supplement are tied to mixer-grinder in building at left by series of inclined augers. Large bins hold grains, smaller one stores supplement.

◄ **Top Left:** Mixer-grinder is run by 2 hp electric motor. Unit can handle four ingredients in proportions set on dials as Tate is doing in picture.
Left: Silage is fed in 3 hp bunk feeder, supplied from 28-ft. silo by electric unloader. 1100-ton silo is believed to be the largest in Alabama.

PROBLEM:

DIPS IN MILK CURVE

SOLUTION:

IRRIGATED PASTURES

Sam McGregor pointed to production charts for the 100-cow herd at Laurinton Dairy Farm. A graduate of Clemson College, he has chosen to follow dairying in partnership with his father at Hopkins, South Carolina.

"See that dip," he observed, pointing to a low point on the production curve. "It came last winter. Production per cow dropped from an average of 32 lbs. in January to 22 lbs. in March."

Why? The big reason, McGregor says, was that February and March brought winter's extreme weather and he was short of green forage.

Grazing Stimulates Milk

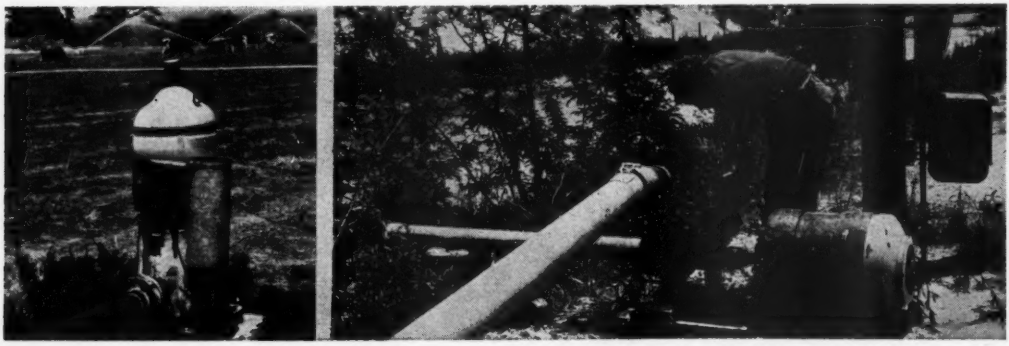
"Grazing is a stimulant to milk flow," he declared. "Whenever our pastures have been short in winter or summer, we've had severe drops in production. This kind of thing seldom happens in spring or fall."

"We feed some hay and all the silage our cows will eat," he added. "But we make our cheapest milk from one hour of grazing per day. That is why we try to have a minimum of ½-acre of pasture for each cow."

The producing herd at Laurinton is allowed to graze from 45 minutes up to four hours every day, depending upon the grass supply. To keep a steady forage supply, the McGregors lean heavily on temporary grazing crops. They plant millet for summer pasture, rye for late fall to February 1, and a mixture of oats and rye grass that is grazed from February 1 into May.

Irrigate to Speed Germination

For these temporary pastures, the McGregors use supplemen-



Turbine-type 10 hp pump (left) in 8-inch well delivers water into reservoir at rate of 250 gallons per minute. Then 30 hp centrifugal pump at right moves water out of 2,000,000-gallon reservoir and into irrigation lines out on pastures.

tary irrigation. They have had their system three years and use it primarily for wetting the land after planting to insure prompt germination and growth.

"We like to get winter grazing seeded in August or early September," they explained, "so that the root system is well-established and there is good plant growth before cold weather comes."

These months normally are very dry ones, and there have been years when waiting for rainfall meant the winter grasses were not seeded until October. In McGregor's opinion, this is a costly delay.

Wet 10.8 Acres Per Day

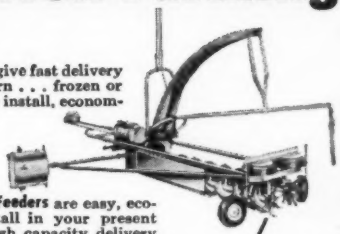
Similar conditions often prevail at the time for planting millet. They find one watering usually is sufficient. They also use the irrigation system to put water on bermuda grass pastures after summer applications of nitrogen. This hastens response to the nitrogen.

The McGregors have a sprinkler system with 24 nozzles that will cover 2.7 acres at a setting. It will put down 1½ inches of water in 3½ hours. They usually figure on four settings per day, giving them a daily capacity of 10.8 acres.

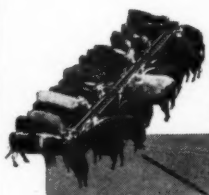
Their source of water is an 8-inch well with a 10 hp pump that delivers 250 gpm. The water is held in a 2,000,000-gallon reservoir, and pumped from there to the sprinklers by a 30 hp pump at the rate of 500 gpm. By allowing the well pump to run continuously while the irrigation pump is being used 12 hours daily, they find there is little drop in the reservoir's water level. Once primed, the pumps require little attention because the electric motors run steadily, being stopped or started simply by throwing a switch. There is no refueling or fuel storage to worry about. □ □

CLAY

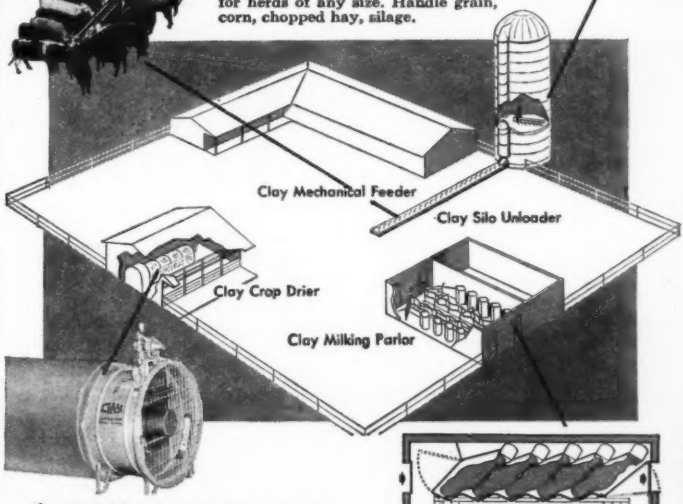
Pushbutton Farming



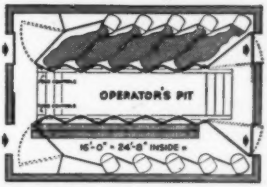
Clay Silo Unloaders fit any silo, give fast delivery of any silage . . . grass or corn . . . frozen or unfrozen. Low in cost, easy to install, economical to operate.



Clay Mechanical Feeders are easy, economical to install in your present bunks. Fast, high capacity delivery for herds of any size. Handle grain, corn, chopped hay, silage.



Clay Crop Driers for both hay and corn. Often pays for itself the first year by reducing field losses and improving quality. *Protein content of hay is usually doubled!* Save high-moisture corn, pick earlier. Portable, for batch or bin.



Clay Milking Parlors. All types including "cow-a-minute" *Herringbone.* Designed for greater cow comfort, faster milking. Milk without stooping while cows come to *you.* Durable, easy-to-clean electro-galvanized finish.

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NAME_____

ADDRESS_____ STATE_____

Rapid expansion of electrical use made necessary a . . .

New Distribution System For This Farmstead

Expanded use of electricity about the farmstead is making it necessary for many farmers to remodel their electrical supply and wiring systems. This was the case with B. E. Hatch of Conyers, Georgia.

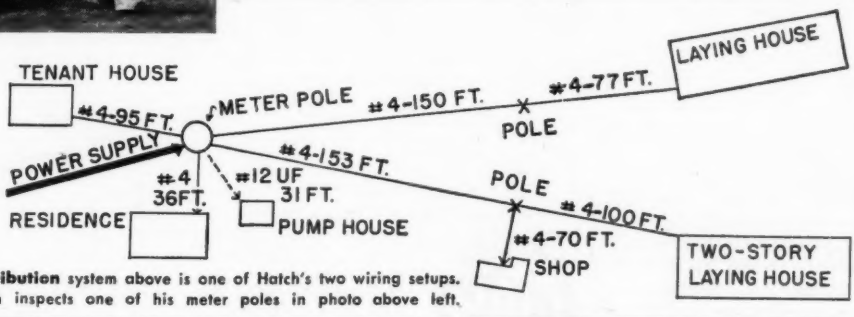
Over the years his electric service has been extended piecemeal to meet immediate needs for power. The system had finally become troublesome and inefficient, partly because of low voltage that resulted from using undersized wires and from overloading service entrance equipment. Under these conditions, lights don't necessarily go out. They just don't burn as brightly as they should. Similarly, motors may continue to operate, but less efficiently and with the added danger that the motor will be damaged from overheating.

Electric wires and service entrance switches can be compared with water pipes and pumps. Their size limits the load they can carry.

Plan Now for Future Growth

About a year ago, Hatch installed a new distribution system. It is designed to meet not only his present needs, but to allow capacity for still greater use of electric equipment in the future. In making his plans, he was assisted by the local Vo-Ag teacher and by agricultural engineers from power suppliers. This help was available without charge or obligation.

Because his farm buildings and tenant houses are spread over a relatively large area, Hatch used two electrical load centers or central distribution



Distribution system above is one of Hatch's two wiring setups. Hatch inspects one of his meter poles in photo above left.

points. The power supplier delivers electricity to 200-ampere service entrance disconnect switches at these points.

Water Pump Wired in Parallel

One of the load centers serves the Hatch residence, a tenant house, two poultry houses, a water pump and equipment shed. The other serves a second tenant house, two pumps, two barns, a feed mill and poultry house. In each case, the water pump is wired in parallel so that all other power can be cut off without interrupting the water supply. This is important in case of fire. Wiring to the pumps is extended underground.

Provides for Outside Lighting

Mounted on each of the distribution poles is a 500-watt lighting fixture. A switch at the Hatch residence controls the nearer light, and the second is operated with a switch mounted on the pole.

Here are other things Hatch accomplished with his new wiring system:

- Service entrance equipment and distribution wires are large enough to insure adequate voltage for proper, safe and efficient operation of lights and equipment.
- Extension of 230-volt service to every building makes it possible to follow general recommendation of operating motors ½ hp and larger on 230-volt circuits.
- Distribution wires are high enough to eliminate hazard of trucks or equipment coming in contact with them.
- Service entrance equipment and separate ground at each building afford added protection for electrical system.

The new wiring system was tied in with existing service entrance equipment and circuits in most of the buildings. □ □

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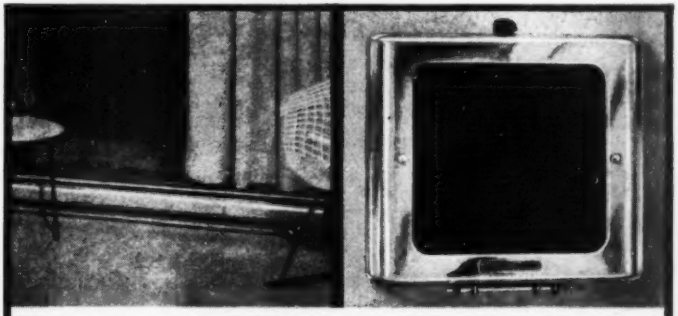

Electromode's Low-Level Baseboard Electric Heat installs at floor level. Warm air travels upward to heat the whole room evenly, from floor to ceiling. No more uncomfortable layers of cold air at ankle level. Eliminates "hot spots" and "cold spots."

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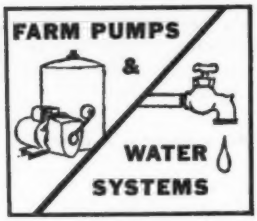


PART ONE

Your Old, Faithful Farm Pump— FRIEND OR FOE?

"At a given point, your old pump has become a liability instead of an asset."

BETTER TAKE ANOTHER look at that dependable old pump on your farm. Although it has been bringing you water faithfully for years, it may not be as much of a friend as you thought.

Your old pump may be eating into your farm profits. Like taxes, many of these costs will be hidden. Unlike taxes, there is something you can do about it immediately.

As a water pump remains in service over the years, its ability to deliver water at sufficient pressure lessens. At the same time, your need for water probably has increased. But the gap between what you are getting and what you need widens so gradually that it may go unnoticed. At a given point, your old pump has become a liability instead of an asset.

Unfortunately, nobody has yet devised a warning bell that sends up a distress signal when the old pump starts to cost you too much money. Yet there are certain indicators that may tell you when it's time to replace instead of repair.

Is there a hand pump on the farm? Obviously, an electric pump will do the job faster, easier and give you more water to improve production and convenience. With labor costs a factor, an electric pump actually will be more economical in the long run. From 65,000 to 75,000 gallons of water are consumed in the average farm home each year. It takes nearly 250 hours to pump this much water by hand. Add the additional time wasted to carry water to where it will be used. The result is a tremendous amount of lost labor which could be

channeled into more productive use.

Even where both a hand pump and an electric pump may be in use, chances are that one larger electric pump with proper water lines will cost you less over a period of years.

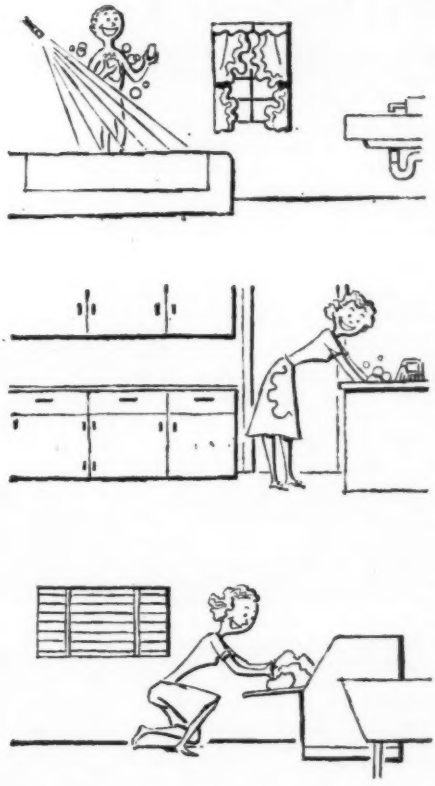
Is your electric pump running more than two hours a day? Pumps properly selected and installed are job-engineered to pump water about 2 out of every 24 hours. Normal electric costs for pump operation therefore should be about 5-7¢ an hour, or $18 to $20 a year.

As a pump wears and becomes less efficient, it takes more power to pump the same amount of water. Increased water use has put more pumping time on the old pump. Consequently, if your pump is operating five hours a day, your electric power costs may have increased to $45 or $50 a year.

It stands to reason, too, that the more hours in a day your pump is working, the quicker it wears out and the sooner you'll be running into costly repair bills.

Are you experiencing more frequent pump repairs? Maintenance costs on an old pump may be high enough that you would be better off replacing instead of repairing. But, even small, frequent repair charges, when added to the other hidden costs of operating an old pump, will be enough to consider a new pump investment.

Are you getting noticeably less and less water? If so, there is a common tendency to blame it on lowering water tables. Actually, your well may be



"Have your daily needs for water increased since you bought your last pump?"

Familiar scene on your farm? "It takes nearly 250 hours to pump a year's supply of water by hand."

as productive as the day it was drilled. Abrasives such as sand have probably made pump water passages larger, dropping the pump's efficiency. Or minerals, such as iron, calcium or magnesium, may have clogged the water passages in the pump, allowing less water to get through. Consequently, you probably still have a vast reservoir of productive and useful water lying wastefully idle because your old pump can't deliver.

Have your daily needs for water increased since you bought your last pump? Larger families? More livestock and poultry? Larger acreage? More water-using appliances? An extra bath? All of these have widened the gap between what water your

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307 E. Henn. Ave., Minneapolis 14, Minn.

"You are flirting with disaster without a pump that can produce at least 8 gallons a minute."

pump can produce and what you need for profitable production and modern living convenience. If you have a good well, a new, *adequate* pump will give you the water you need. Or you may want to consider a second well and a second pump. Quite often, extra profits because of increased production will pay for the installation.

Do you have adequate fire protection? Here is reason enough why your old pump may be foe instead of friend. Underwriters say that "an effective fire stream through a small nozzle (3/16"-¼") requires at least 8-10 gallons a minute, which quantity should be available for at least two hours." Even this supply will not extinguish a fire well under way. But it can provide protection for adjoining buildings or help contain a fire until the community truck arrives. You are flirting with disaster without a pump that can produce at least 8 gallons a minute.

How much will it cost you to replace your present pump? This varies, depending on the nature of your well and the amount of water you use. However, if you figure what your present pump is costing you . . . in electric power, labor, maintenance, loss of water capacity, inadequate fire protection . . . it's a sound investment for you to replace now, rather than waiting until the old pump breaks down. Time-payment buying, including interest charges, will probably cost you less per month than paying for the hidden and direct costs on your old pump.

EDITOR'S NOTE: *Subsequent articles will describe various types of pumps now on the market and give you guides to follow in selecting the type of pump that meets your specific farm needs. Also coming is an article on preventive pump maintenance, showing how to keep your new farm water system operating at peak efficiency.*

Use Grounding Wire on Tools

IT'S IMPORTANT to ground the metal frames of all electrical equipment. Such grounding will safely drain off any stray electrical charge that may seek its way into the tool's frame through frayed wires, defective insulation or various other defects and faults.

Three-Wire Power Cord

Grounding is especially important in the safe operation of portable equipment. An extra wire for grounding comes as part of the cord on certain electrical equipment such as hand drills, saws and washing machines. This wire generally runs out the side of the cord plug or a three-prong grounded plug cap is used. If a third wire is used with a two-prong cap, the cap should be replaced with the new grounded three-prong type or the third wire should be securely fastened to a ground connection when the equipment is being used. When grounded three-prong plugs are supplied, be sure to use them even if it involves replacing the convenience outlet with a grounded type that will take the special plug.

Add Needed Ground Wire

Many portable items, especially older models, do not have the extra grounding cord. This does not, however, mean that they can be safely operated without grounding. All that is needed to ground such equipment is a pair of small clamps and a length of No. 16 or 18 copper wire. Clamp one end to the frame and the other to a grounded water pipe or to the grounded terminal of the electrical outlet box. □ □

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EASY-HEAT
FREEZE-PROTECTION!
Keep water flowing all winter long in pipes and V-shaped troughs. Quality-built Easy-Heat —in 3' to 100' lengths— comes with or without thermostat. Complete kit has waterproof wrap plus friction tape. Insist on Easy-Heat at your farm supply store.
EASY-HEAT, INC.
Mfrs. of Concrete Floor Heaters
Dept. EF, Lakeville, Indiana

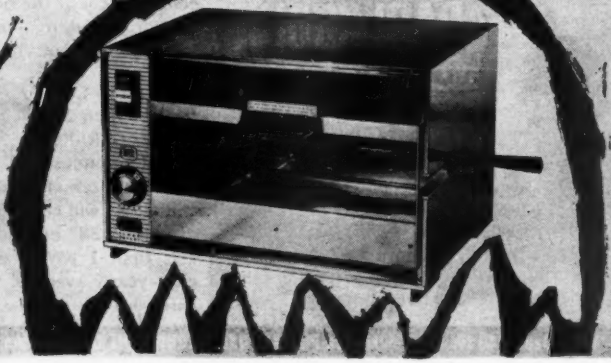
MR. DAIRYMAN
Don't YOU Be Fooled
about which cooling method is best for farm bulk milk tanks –
The fact is — more than 90% of all dairy plants use ice-water systems to cool their milk . . .
DARI-KOOL
BULK MILK COOLER
• DARI-KOOL'S fast ice-water cooling exceeds the new 3A Cooling Standards, now in force, as of Sept. 1, 1960.
• Tests prove that for less than 2¢ a 1960 DARI-KOOL operating under full load and normal milkhouse conditions will cool 100 lbs. of milk to 38° or below, on less than 1 KW of electricity—yearly average.
Based on a rate of 2¢ per KW-hr.
Write Dept. 140 for FREE Milkhouse Plan Kit. DAIRY EQUIPMENT CO., Madison, Wis.

Christmas Suggestions

Dual control electric blanket is ideal gift for mother. Moth proof, easy-to-launder rayon and cotton, bound with nylon taffeta. Available in twin and double-bed sizes; also comes with a single control.

Rotisserie-broiler with chrome-plated steel exterior and interior is 16" wide, 10" high. Glass door hinges down for easy access. Door and all parts except heating element are removable to simplify cleaning...

Oil-fired cozy furnace with thru-electric heater. Fan-forced radiant heat type with thermoguard safety switch, automatic thermostat; it can be tipped upward as much as 20 degrees to allow precise direction to heat flow. Three pushbuttons give a choice of heat levels.



THE FARM HOME

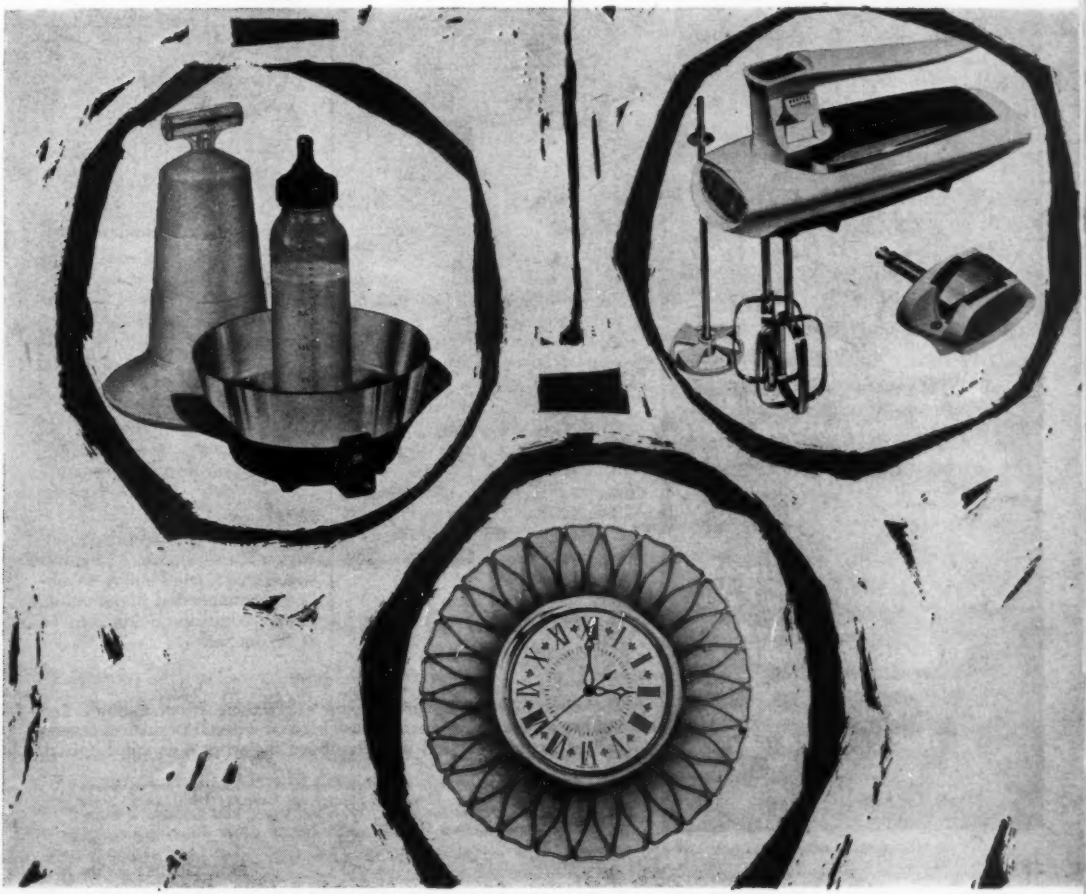
BY RUTH GAFFNEY

Do you like to receive a long-lasting gift that will give pleasure to the whole family? These suggestions fit that idea perfectly.

Do you have an expectant mother on your Christmas list? This automatic, thermostatically-controlled bottle warmer will make an ideal gift. Steam covers entire surface of bottle to warm and sterilize it at same time.

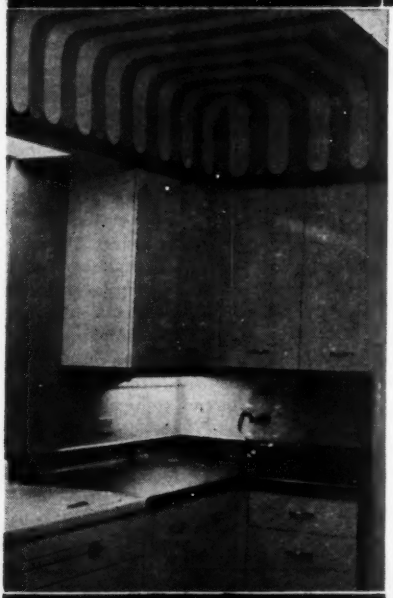
Pleasant and practical gift for living room, dining room or hallway is this new electric wall clock with airy polished brass frame. Twelve inches in diameter, it has white metal, open-faced dial with easy-to-see black numerals, black cut-out hands and brass sweep second hand.

Newest design in portable, three-speed hand mixer includes a knife sharpener. This accessory plugs into end of appliance. Also has a drink mixer attachment which is handy for whipping up milk shakes, fruit juices. Available in yellow, pink, turquoise, as well as white. Hangs on wall for easy storage.



A GUIDE TO: Lighting Your Home

PART III by A. V. KREWATCH*



Well lighted counter area

AN efficient kitchen, an enjoyable place to prepare tasty food for the family is always well lighted. The work center or counter area where the work takes place needs sufficient light to avoid mistakes in reading recipes. Good Light helps you see quickly how mixtures are blending in the mixing bowl of your electric mixer. Good lighting speeds the work along. Such work areas need 50 foot-candles of light – light that prevents the aggravation of working in your own shadow. How can you get this light?

Work Center or Counter

AN IDEAL LIGHTING CHOICE for the kitchen work center is a fluorescent tube fixture. Fluorescent tubes used in this manner provide economical lighting over a wide area because of their linear shape. Their high light output, about three times as much per watt as for incandescent lamps, makes them economical. Their tubular shape distributes light more evenly and lessens reflected glare.

The choice of color is important when working with food. The fluorescent lighting should be kind to your color scheme, but it should also keep food looking natural. Shades of Deluxe warm white or Deluxe cool white are recommended.

Fluorescent Bracket

This bracket may be mounted on the wall near the bottom of the cabinet. One Homeline 20 watt fluorescent tube for each separate three to four feet of counter space will meet the 50 foot-candle need.

Shielding: Shielding is not needed if the cabinets are less than 54" from the floor and fixture is back from the front edge of the underside of cabinets. Shielding, however, is necessary if the fixture is at the front edge of the cabinet.

Fluorescent or Incandescent

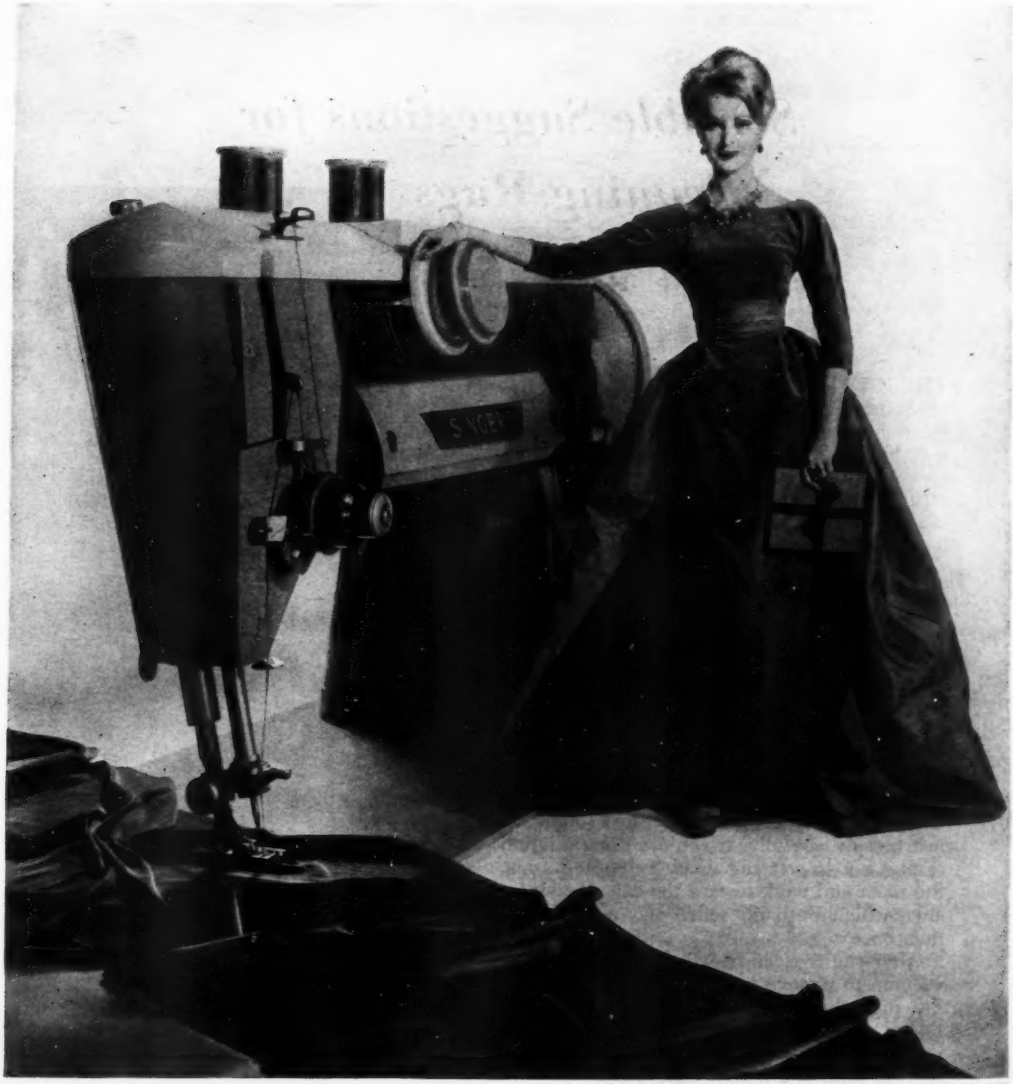
For brackets over work counters where there are no upper cabinets, mount fixture so that bottom edge of shielding is 58" above the floor. Shielding is always necessary when lamp or tube is in line of vision. Use metal or fairly dense plastic for the shielding material.

Fluorescent: One Homeline 20-watt tube for each separate three to four feet of counter space.

Incandescent: Use two 60-watt each incandescent fixtures spaced 20 inches apart to obtain recommended illumination. Lower edge of shielding to be at 58 inches.

Ceiling Fixture: As an alternate where there are no cabinets and neither of the above can be used because of wall problems, a good ceiling fixture centered directly above the work area can be used.

Member "Four-State Lighting Committee" consisting of representation from Agric. Extension Services of Univ. of Md., Penna. State Univ., Va. Polytechnic Inst., West Va. Univ., and Residential Dept. of Potomac Edison Co.



DESIGNED EXCLUSIVELY FOR MC CALL'S BY PAULINE TRIGERE—PATTERN NO. 6969

What's the newest slant on holiday sewing?

It has to do with a special needle and you.

The needle slants forward—so you don't have to. It pierces the fabric *clearly* an inch ahead of the old style, straight up and down needles.

With this slant, lively silks are more controllable. You can do ticklish top-stitching—boldly. Or put in a gusset with more than blind faith.

It's a slant you get *only* with SINGER* Sewing Machines. It's part of what makes the SLANT-O-MATIC* Machine by SINGER the greatest zig-zag machine ever built. Discover this new angle to sewing... now at...

SINGER SEWING CENTERS

Listed in your phone book under SINGER SEWING MACHINE CO.

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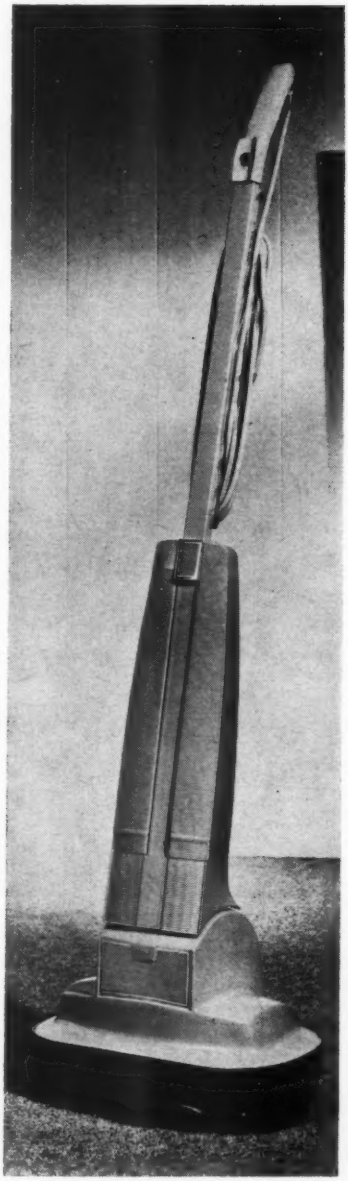
Sensible Suggestions for Cleaning Rugs At Home . . .



THE INCREASED POPULARITY of electric floor polishers is due in no small part to the fact that they serve more than one purpose. In addition to applying wax, polishing and buffing hard-surface and wooden floors, the newest types of floor-care appliances allow you to shampoo almost all types of rugs in your home.

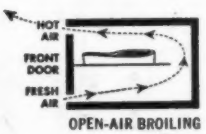
First, the rug should be given a thorough cleaning with a vacuum cleaner. There are several types of cleaning compounds on the market and it is best to use the one recommended by the manufacturer of your polisher. Test rug for color fastness by applying some of the cleaning solution to an inconspicuous spot, then rub briskly with a clean cloth. If no color comes off on the cloth, the rug is colorfast and safe to clean. It is also a good idea to place several thicknesses of newspaper around edges of rug so none of the shampoo or cleaner will get on the floor or walls.

Most polishers dispense the shampoo onto the rug by simple pull of a trigger; brushes "scrub" the rug but, because of a special attachment, full weight of the polisher does not rest on the rug. Read and follow manufacturer's instructions carefully. If you are using a liquid cleaner, be careful not to wet rug excessively. Start from one end of the room and work toward the exit. Heavy traffic areas or areas which are badly soiled may require going over more than once.

After rug is clean, it will be necessary to again use the vacuum to remove lint and dirt brought to the surface of the rug pile by action of the cleaning appliance. Place folded waxed paper or cardboard under furniture legs that rest on the rug to prevent rust or varnish stains; do not remove until rug is thoroughly dry.

Carpeting is often the most expensive single item purchased for the home, yet it frequently gets the least attention in the way of regular care and cleaning. The National Institute of Rug Cleaning suggests that rugs should have a quick surface cleaning with carpet sweeper or vacuum cleaner every day. In addition, they should be thoroughly cleaned with an electric vacuum cleaner once or twice a week. They should be sent to a reliable *professional* cleaner at least once a year. Many rugs will retain their beauty and last a lifetime with this type of care. □ □

New rotisserie with amazing "Open-Air" broiling!



OPEN-AIR BROILING

Ordinary appliances surround your meat with hot, moisture-laden air that roasts, instead of broils. But the new General Electric Rotisserie-Broiler is designed to provide a constant flow of fresh air. Result—direct infra-red heat sears the outside quickly, seals in the natural juices. Enjoy best broiled meats, seafood ever—plus an ultra-modern rotisserie that cooks two succulent chickens, roast beef or a leg of lamb. Has an automatic timer and a timed-outlet for other appliances. General Electric Company, Portable Appliance Department, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Sew Fashion-Wise to Economize!

4654—Jumper and blouse duo to enlarge your wardrobe. Printed Pattern in Half Sizes 14½-24½. Size 16½ jumper: 3 yards 39-inch fabric; blouse 1⅞ yards. 35¢

9108—Ever-ready shirtdress with bias-cut bodice panel, 8-gore skirt. Printed Pattern in Misses' Sizes 12-20; 40. Size 16 takes 5⅝ yards 35-inch fabric. 35¢

9310—Casual style to sew with slim skirt or flared—both included in the Printed Pattern. Half Sizes 14½-24½. Size 16½ with slim skirt; 3⅞ yards 35-inch fabric. 50¢

See the season's newest styles in glowing full color. Order our Fashion Catalog TODAY!

9099—The Christmas gift she'll always remember! Wardrobe for her baby doll includes garments shown. Printed Pattern for dolls 10, 12, 14, 16, 18, 20 inches tall. STATE SIZE. 35¢

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4838—Classic suitdress to wear around the seasons. Printed Patterns in Half Sizes 14½-24½. Size 16½ outfit takes 3½ yards 39-inch fabric. 35¢

PATTERN 9310 is FIFTY CENTS.
PATTERNS 4654, 9108, 9099, 4725, 4838 are THIRTY-FIVE CENTS each.

Add 10c each for 1st-class mailing.
Send 35c for Fall-Winter Catalog of smart fashions. *Send orders (with coin) to:*

ELECTRICITY ON THE FARM,
Pattern Dept., P.O. Box 122,
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Cooking for Christmas

DATE-NUT LOAF

1 cup butter
4 eggs
2 cups sugar
3 cups flour
¼ teaspoon salt
1 teaspoon soda, dissolved in ½ cup buttermilk
2 tablespoons orange juice
1 cup dates, chopped
1 cup coconut flakes
1 cup nuts, chopped

Cream together butter and sugar; add eggs, one at a time, and mix well. Sift together flour and salt and add to the mixture, alternately, with buttermilk and orange juice. Fold in dates, nuts and coconut. Place in loaf pan and bake in moderate oven (350° F.) for 1 hour. Remove from pan and place on rack to cool. Drizzle sauce over cake while it is still hot.

Sauce: Mix together 2 tablespoons orange rind, grated, 2 cups powdered sugar and 1 cup orange juice.

POTATO FUDGE BARS

½ cup butter, melted
3 tablespoons cocoa
1 cup sugar
2 eggs, beaten
1 teaspoon vanilla
2 tablespoons buttermilk
½ cup sifted flour
1 teaspoon baking soda
1 cup grated raw potatoes
1 cup chopped nuts

Mix cocoa and sugar, add melted butter and cream well. Add baking soda to sifted flour. Sift into above mixture alternately with milk. Mix well. Add vanilla. Stir in grated potatoes and chopped nuts. Bake in greased 8 x 8 x 2-inch pan in moderate oven (350° F.) 30-40 minutes. Allow to cool in pan. Sprinkle confectionery sugar on top. Cut into 1-inch squares.

complete package of RANGE VERSATILITY

Monarch SINCE 1896 **36 INCH ELECTRIC COMBINATION**

Monarch electric combination range offers new all 'round kitchen efficiency—it cooks, bakes, heats. Features include stylish mantel back, full complement of automatic controls, giant 6726.9 cu. in. oven, super speed surface unit electric section, and heater section for added warmth and cooking.

built-in coal-wood or oil heater section

MONARCH RANGE COMPANY
7010 LAKE ST., BEAVER DAM, WIS.

PASTEURIZE MILK IN 15 MINUTES *with the* **Esco QWIK-WAY HOME PASTEURIZER**

Now you can pasteurize a gallon of raw milk in just 15 minutes, as safely and easily as commercial dairies, while preserving the natural flavor and sweetness — with Esco's Qwik-Way Home Pasteurizer!

1 gal. size 5 qt. cap. **$27.95**

- Lightweight aluminum and stainless steel construction.
- Sanitary, removable milk container simplifies storage and cleaning.
- Completely automatic—no timer to set.
- Fully guaranteed by the Originators of Home Milk Pasteurizers.

2 gal. size **$36.50**

ELECTRONIC SPECIALTIES CO., INC.
1 Island Avenue, Batavia, Illinois

JUNIOR PARTNERS

1960 Winners . . .

FFA Farm Electrification

Arthur Duckworth

Winner of the 1960 FFA award in Farm Electrification is Arthur Duckworth, 17, of Reform, Alabama. His $250 prize was presented at the national FFA convention in Kansas City in October. Regional winners, each receiving $200 awards, are: Alfred Chapin, 17, Watertown, Connecticut; Harvey Stockton, 18, Catron, Missouri; and Alan Schurman, Ridgefield, Washington.

Arthur Duckworth lives on a farm near Reform, Alabama, with his parents, Mr. and Mrs. S. J. Duckworth. He is a senior in Palmetto High School, studying vocational agriculture under R. D. Claybrook.

The future farmer installed in his home a new 100-ampere service entrance with an 18-circuit panel, as contrasted with the previous 60-ampere service and four house circuits. He put in convenience outlets, new lighting fixtures, and a low-voltage switching system which includes a provision for remote control.

On the entrance pole, he installed a 150-ampere outside main panel. Overhead wires provide the 100-ampere house service and a separate 50-amp line to the barn as well as an underground 50-amp line to the pumphouse.

Last year, Arthur and his father built a 12 x 18-ft. electrical workshop on the farm and Arthur wired it with 115-volt and 230-volt service. They bought an electric welder which Arthur has used to build a metal welding trailer, two farm trailers, and other useful equipment.

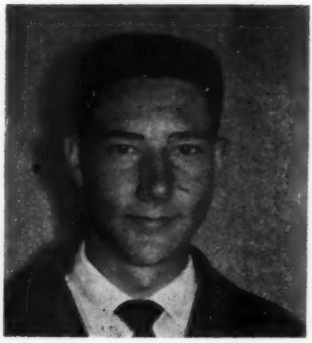
One of the jobs that pleased Arthur most was the construction of an electrical panel to demonstrate a wide variety of wiring methods. Local businessmen contributed funds for the materials and Arthur did most of the construction work. The panel is used at school as a teaching aid in vocational agriculture classes.

North Atlantic Region

Alfred Chapin

Central Region

Harvey Stockton



Pacific Region

Alan Schurman

Alfred Chapin, winner for the North Atlantic Region, is a senior at the Wamogo Regional High School, Litchfield, Connecticut. His FFA advisor is Robert E. Bennett. Alfred lives with his parents, Mr. & Mrs. Alfred Chapin, Sr. on a dairy farm at Watertown. He has served as vice president and reporter of the Wamogo FFA chapter.

Most of the dairy equipment on the farm is operated electrically, and Alfred maintains and services it. Besides usual household appliances, the farm has electric pumps, portable generator, electric barn cleaners, hay drier and milking machines, a 180-ampere welder, and many electric hand tools and motors.

One of the barn cleaners was designed and built by Alfred. The heart of the cleaner is an electric motor connected to an automobile transmission, flywheel and rear end, to turn a 23-inch arm with pitman which activates the shuttle cleaner back and forth. The cleaner is 56 feet long.

When the welder was purchased, Alfred ran a 230-volt underground circuit from main barn to repair shop. He also has installed the ventilating fan in the barn, a sump pump in the cellar of the house, and numerous lights, switches, and convenience outlets.

Harvey Stockton is Central Region winner. He is a 1960 graduate of the Parma, Missouri, High School, where he studied vocational agriculture under Larry B. Reid. He lives on a 1300-acre diversified farm with his parents, Mr. and Mrs. C. L. Stockton. Servicing electrical equipment around the highly-mechanized farm is his regular responsibility.

When the family built a new home four years ago, Harvey assisted with the electrical wiring. Since then, he has wired a tenant house and extended lines to the hog house and to other buildings on the farm, and has installed convenience outlets, lights, and switches.

Harvey has installed two water pumps, ventilating fan, door bell, air conditioner, and air compressor. He has done repair work on many motors and electrical equipment. Harvey has built six pig brooders, an electric fan for the farm shop, a battery charger and three table lamps for use in the home. His supervised farming program this year consisted of 10 acres of cotton and 20 acres of soybeans.

Alan Schurman, winner for the Pacific Region, is the son of Mr. and Mrs. Paul Schurman. He was graduated last June from the Ridgefield, Washington, High School. His FFA advisor is Kenneth Owen.

When the Schurmans moved to their present home, there were few buildings on the farm and the only one that was wired for electricity was the house. Alan and his father have built new buildings and wired the old ones. Alan did most of the electrical work, including all new wiring in the home.

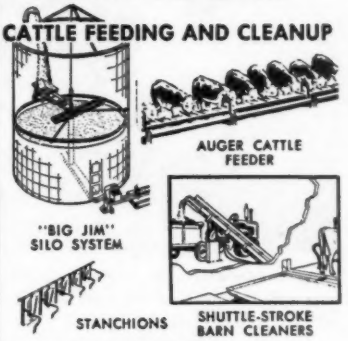
Their latest job was the construction of a large sheet-metal-clad shop building. Within the shop they have a metal-working lathe, shaper, welders, and other equipment requiring considerable use of electricity, and heavy-duty circuits to handle the load.

Alan has built a battery charger, portable bench grinder, portable buffing wheel, and floodlight with floor stand. He made an automatic air compressor and put a motor on the concrete mixer.

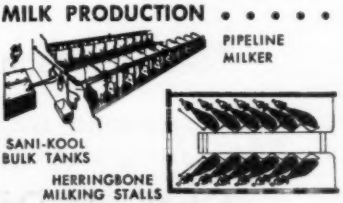
Among Alan's other electrical installations are a "heat pump" heating system for the home, water pump, yard lights, and numerous household and shop appliances. □ □

Let Jamesway Power Choring cut your chore time cost and labor

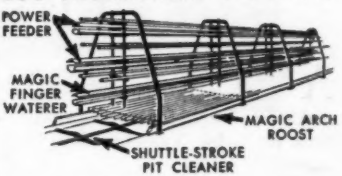
CATTLE FEEDING AND CLEANUP



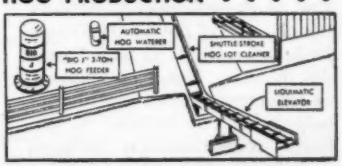
MILK PRODUCTION



EGG PRODUCTION



HOG PRODUCTION



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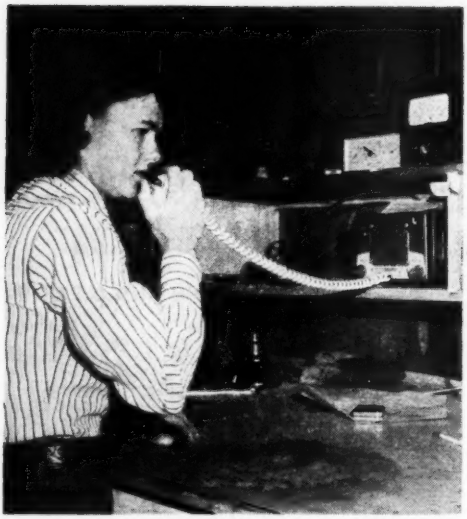

From headquarters of 1200-acre Boot Ranch, farm manager Lois Oxnam keeps in touch with widespread operations. Unit is used for transmitting and receiving.

Tired of wasting time?

Here's one way to . . .

Shrink Distances on Your Farm

A tractor gets bogged in a back field. The operator makes a long, time-consuming walk for help. Valuable time is wasted.

There was a time when this kind of thing happened at Boot Ranch, A. D. Boyd's 1200-acre Brahman cattle farm near Dunedin, Florida. But his employees no longer waste time walking for help when misfortune strikes. Radio communication between mobile equipment and farm headquarters makes this unnecessary.

Further, this ease of communication enables Boyd to keep in touch with workers throughout the day. He knows the progress they are making, and he is in better position to make his plans for future jobs. If desirable, he can change a worker's instructions on a moment's notice.

Boyd uses the Citizen's Band Radio Service as authorized by the Federal Communications Commission. Two tractors, a jeep, two barns and his personal car are equipped for two-way communication. The system has a reliable range of 5 to 10 miles. No operator's license is required, but equipment is licensed.

Portable units for mobile equipment require about the same current as an automobile radio, while units operating from fixed locations use 115-volt current.

Miss Lois Oxnam, farm manager, says visitors to Boot Ranch often are surprised to step out of their car and, seeing no one, hear a mysterious voice inquire who they are. An intercom system between the two barns, located approximately a mile apart, enables her to work at either barn and hear what is going on at the other. If the startled visitors answer, she is able to hear their reply and talk with them.

Say what you will about INFLATION, but WHERE would FOOTBALL be WITHOUT it? . . . . SODDEN THOUGHT: A COLD is the ONLY thing that can STAY in SOME people's head MORE than a DAY. . . . . A young college friend of ours sent us this example of his personal LOGIC: "A BARGAIN is a GOOD BUY. A GOODBYE is a FAREWELL. A FAREWELL is to PART. TO PART is TO LEAVE. My girl LEFT without saying GOODBYE. SHE was NO BARGAIN anyway!" . . . . Ma Larkey, Busy Biddy of Rumor Ridge sez: "There wouldn't be anywhere near as many divorces in this country IF a couple HAD to hire a lawyer to GET married." . . . . It's getting so that MARRIED LIFE is just one CANNED thing after another. . . . . FOR MEN ONLY: A WISE husband will buy his wife SUCH fine china that she WON'T trust him to wash the dishes. . . . . INFLATION'S got to the HENPECKED-LITTLE-MAN-DOWN-OUR-STREET. He reports: "My wife and I USED to sit down and GO OVER our budget VERY carefully. We NO LONGER sit down but we SURE do GO OVER our BUDGET!" . . . . IF you're WONDERING what HAPPENED to the old fashioned girl, you'll PROBABLY FIND her AT HOME with her husband. . . . . EVERSTOP-TO-THINK?—A COMPANY that makes TOO many mistakes GOES bankrupt. A GOVERNMENT that makes TOO many mistakes borrows money to make MORE. . . . . FLIP QUIP: The most curious thing about women is men. . . . . Month END Sales, HALF Price! GOOD BUY. EVERYTHING reduced, And $o am I! (Katherine Child in LAFF BOOK). . . . . SODDEN SUDDEN THOUGHT: WOMEN were made BEFORE mirrors—and they've STAYED THERE ever since. . . . . There'd be a GREAT MANY more brunettes in this country, if SO MANY of them HADN'T DYED young. . . . . PARTING THOUGHT: A FAMILY MAN is a fellow who has replaced the CURRENCY in his wallet with SNAPSHOTS. . . . .

Your pun-peddler—DUFFY

NEED A NEW PUMP?

. . . . . Unless you get all these Red Jacket "Submorga" Pump Features YOU WON'T GET YOUR MONEY'S WORTH

- Stainless Steel Six-Spline Shaft won't break out of impeller hub . . . assures quiet, vibrationless operation
- Precision machined all-brass Impellers and Diffusers provide high pumping capacity
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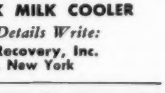

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WHAT'S NEW

New Egg Production System

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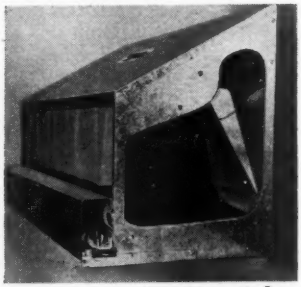


to prevent roosting, Storm Industries of Dassel, Minnesota has come up with a new concept in egg production automation. Egg collector has plastic cups, turns corners easily.

Metal-Cutting Drill Attachment

"Nibblex" is a sheet-metal-cutting attachment for your heavy duty ¼-inch electric drill. The easily attached and handled tool

will cut up to 18-gauge steel and iron at a rate of 7 feet per minute, leaving safe rounded edges.—Hedstrom Tool Co., P.O. Box 319E, Montclair, N. J.

Non-Siphoning, Removable-Bowl Waterer

The Nelson water bowl now has an approved non-siphoning feature in addition to a bowl that is easily removed for cleaning. The new "Model 100" is said to meet all requirements for "Grade-A" dairy operations. Also available is a conversion kit which can be installed on existing Nelson waterers.—Nelson Mfg. Co., P.O. Box 616, Cedar Rapids, Iowa

Automatic Bin-Level Control Kit

This kit combines two paddle switches and a 24-volt relay to activate auger that fills mechanical poultry feeder bin. One switch is near bottom of bin, the other near top. When feed gets low, bottom switch activates auger through relay. When bin is filled, top switch turns auger off.—James Mfg. Co., Ft. Atkinson, Wisc.

Frozen Food Recipe Booklet

"Magic Fare with frozen prepared foods" is a 14-page recipe booklet describing some new and different twists in preparation of frozen prepared foods such as frozen condensed soups, frozen meat pies and frozen prepared dinners and entrees.—Carolyn Campbell, Campbell Soup Co., Camden 1, N. J.

Grain Leveler

"Spreads-All" is a new ¾ h.p. grain leveler that mounts in top of grain bin and fills bin evenly by spreading grain over entire bin during filling. Unit eliminates trash pockets and acts as grain cleaner. Can be used in bins 14

to 36 ft. in diameter, with all types of grain.—Lennox Industries, Inc., 1701 E. Euclid Ave., Des Moines 5, Iowa

JUNIOR PARTNERS

Build a study center, and
Light it Right

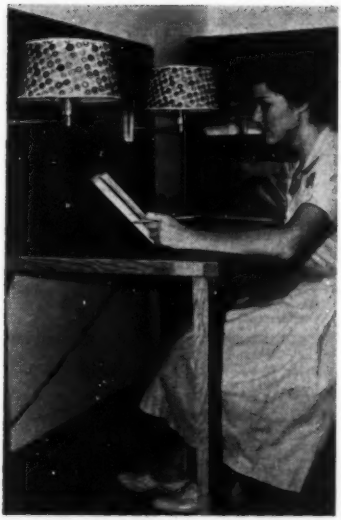
By HURST MAULDIN

A DEFINITE PLACE to study, properly lighted, is highly prized by school-age youngsters and their parents. Such a study center can be built at home or in the school shop at very little cost.

In cases where new materials are used, the top for the table should be smooth, one-piece, ¾-inch plywood, and the back, ¼-inch plywood. Lumber dealers or do-it-yourself centers usually will cut all the pieces to measure. Where flush doors can be bought as "seconds" with one good side remaining, table top and back can be made from these.

Lighting for the table can be provided by swing-arm floor lamps, or by table lamps. It is best, however, to use built-in lighting of ample capacity and design to give plenty of quality light. They may be pin-up or wall lamps, spaced 30 inches apart, with the new small-size, soft-light 100-watt bulbs. The bulbs should be white, inside-coated. Lamps should have flaring, wide-bottom shades with white linings for greater reflection.

Where fluorescent lighting is used under a bookshelf, a 2-tube, 40-inch strip is recommended. This, in combination with an incandescent ceiling fixture, will give a mixture of light that is very comfortable to the eye.

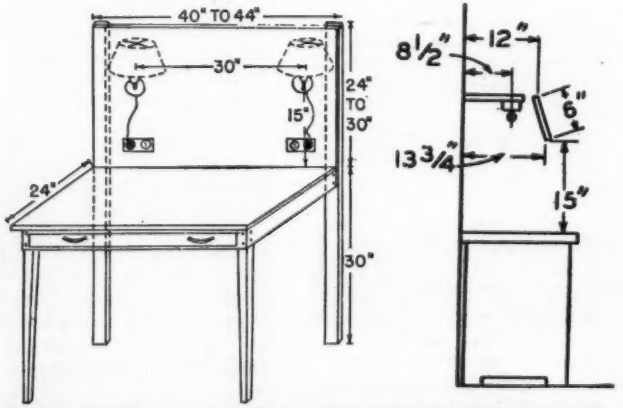


Portable study center used by Susan Berry, Alabama 4-H Club president, has soft, diffused, high-level incandescent lighting.

The study center will have these features to avoid eyestrain:

1. A minimum of 70 foot candles of light at the desk work surface.
2. Glare eliminated or made negligible by using inside-coated white bulbs or diffusing bowls.
3. Shadows eliminated or softened by having light come from many sources.
4. Good lighting balance—open-top lamp shades combined with good ceiling fixtures, to provide the recommended 1/10 as much light over entire room as at study table.

The study center can be expanded to accommodate two persons by making it 72 inches long and using three pin-up lamps spaced 30 inches apart or two fluorescent strips installed end-to-end. □ □



Basic study table, above left, can have drawers or bookshelves added easily. Suggested lighting fixtures will provide 70 foot-candles at work surface. Lampshades may be translucent, but not thin enough to permit glare through sides. Fluorescent lamp may be used (diagram above right), with lamp shielded front and sides by a 6-inch overhang slanted to light entire work surface.

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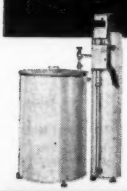
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RESEARCH NOTES

By J. P. SCHAENZER

For every 10 lbs. of milk, a dairy cow is fed 3 lbs. of grain plus hay or other roughage.—USDA Western Research Lab., Albany, Calif.

Grain sorghum yielded 77 bushels per acre when the soil was watered on July 7 to a depth of 5 ft., as compared with 47 bushels on non-irrigated land.—Univ. of Nebraska

A 36 x 108-ft. poultry house for 3000 layers meets best the requirements for heat conservation, mechanization and economy, and is expandable to 15,000 birds.—Michigan State Univ., Merle L. Esmay

In 1958, fryers 8% larger than those in 1952 were produced in 10 days less time with 16% less feed per pound of gain. Labor also was decreased from 9.8 to 3.2 hours per 100 birds.—Utah State Univ., R.H. Anderson & Lynn Prestivich

Apricots are cut in halves, pitted, and placed cup side up in drying trays at the rate of 150 per minute or 4½ tons per day, by an experimental machine operated by two or three people.—Univ. of California, Roy Bainer

For winter poultry house ventilation of both layers and broilers, the removal of about ½ cfm of air per lb. of bird is desirable.—New England Rural Electrification Council

Cucumber beetles, corn earworm, European corn borer, potato leafhopper and tomato and tobacco hornworms were effectively controlled in gardens by blacklight traps.—Purdue Univ., Eldon Fredericks

The dairy cattle holding pen for a milking parlor should allow 10-15 sq. ft. per head for small-breed cattle and 15-20 sq. ft. for large.—Univ. of Tennessee, M.H. Falkner & J.B. Brower

Predicting the harvest size of irrigated apples, pears and peaches may be possible in a year or two. System is based on weight averages supplementing a gauge and chart for thinning purposes.—USDA & Washington State Univ., L.P. Batjer

The use of lard has dropped from about 14 lbs. per person about 40 years ago to 9 lbs. in 1959.—AMS, USDA, G.W. Kromer, Agr. Econ.

For brooding pigs it generally takes 30 watts of thermostat-controlled electric heating cable per sq. ft. to warm the farrowing house floor.—Univ. of Missouri, K.L. McFate

Storage of freshly-processed frozen broccoli at 0°F. for 9 months did not appear to affect its quality.—USDA, Home Economics Institute

All fresh berries are highly-perishable and will keep best if refrigerated at 32° to 40°. —USDA, W.E. Lewis

Rose bushes having both large and small canes and held for transplanting can be immersed in 190° wax for not over 3 seconds for protection from drying.—Ohio Agric. Exp. Sta.

Hard water gives the best flavor for coffee or tea, but softened water produces more tender vegetables.—South Dakota State College

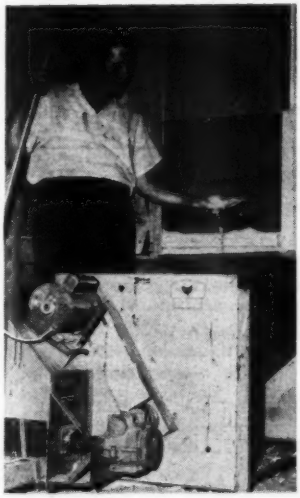
Mechanical Feeder Saves 1½ Hours a Day

A mechanical feeder in his 10,000-bird broiler house saves him 1½ hours a day, reckons J.C. Edwards of Mendenhall, Mississippi. He has sound basis for that estimate because he is feeding his two other 5000-bird units by hand.

"It takes me 35 minutes a day to look after 10,000 birds in the house with the automatic feeder," Edwards declares. In contrast, he says the time required to look after the 10,000 hand-fed birds adds up to more than two hours.

Also important to him is the fact that his capacity is increased, because his future plans call for expansion. With mechanical feeders, Edwards figures he could look after 40,000 birds by himself.

He uses 960 feet of trough in a 40 x 250-ft. house. The trough is raised four times during the growth of a brood of chicks—about an inch each time.



Plywood feed bin is emptied into feeder hopper through sliding door.

The feeder is driven by a ¾ hp motor with time clock control.

Edwards says the cost of his mechanical feeding system, including bulk storage bin and time clock, was about $1500. He reasons the labor-saving alone will pay for the initial investment over a period of three years. Switching to bulk handling saved him $3 a ton in feed costs too. □ □

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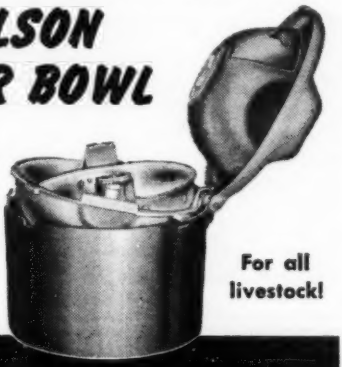

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High-wattage heat cable

Protects Poultry Water Supply

By ELTON RALSTON

In the open-type poultry houses widely used in the Southeast, winter brings a problem—how to prevent drinking water from freezing.

This problem is further complicated by the use of large-volume water troughs. These galvanized troughs generally are 3 x 3 or 4 x 4 inches square, with normal water depth of 2 to 3 inches. Variations in shape may occur, but water volume is usually the same.

Conventional 5-watt-per-foot heating tape is commonly used in shallow V-shaped troughs. But North Georgia farmers have found that the large-volume troughs need at least 20 watts per foot to prevent freezing.

During the winter of 1958 a new cable was used successfully by several poultrymen. It is a silicone-rubber tinned copper braid heating cable rated at 10 watts per linear foot. It is available in two lengths: 50 feet, 115 volts; and 100 feet, 230 volts. To obtain 20 watts per foot of trough, the proper length of cable is doubled back to form a loop; hence, two runs of cable at 10 watts per foot gives 20 watts per foot of trough. Even when the temperature hovered around zero, water did not freeze in troughs where this cable was used.

On 115-volt circuits, the ends of a 50-ft. length of cable are brought into a 3-prong grounded plug. On 230-volt circuits the ends of a 100-ft. length of cable are brought into a 3-prong twist-lock grounded plug. Twist-lock plugs and receptacles on 230-volt circuits assure that a 115-volt loop will not be plugged into a 230-volt circuit and vice-versa. Non-metallic sheathed cable with ground wire is used for all circuits.

On-off operation by use of a manual disconnect switch may be preferred by some poultrymen. The switch is manually turned on when the temperature approaches 32° and off when it rises above freezing. Though initial cost is reduced, this method requires supervision and uses more electricity.

Automatic control can be had by using a double-pole thermostat set to any temperature above 32°. The sensing bulb can be placed in either air or water. The greater saving in electricity is obtained when the sensing bulb is placed in water.

20-watt-per-ft. heating cable is laid loosely in 4 x 4-in. galvanized trough.

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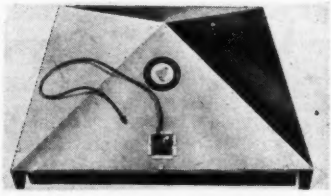

New automatic dial control —no thermometer needed.

With a Bailey Electric Brooder you are assured of lower brooding costs, constant temperature and completely safe operation. Why? Because this 750-chick, quality constructed brooder was designed by experienced poultrymen with the advice of agricultural and electrical engineers.

Georgia Poultrymen report the Bailey electric brooder cuts wintertime brooding cost ½ cent per chick.

What's more, Bailey Brooders are clean, safe and convenient. No wonder more than 4,500 of these units are in operation on Georgia broiler farms. Write today for information on how you can substantially increase your broiler profits by installing Bailey Brooders.

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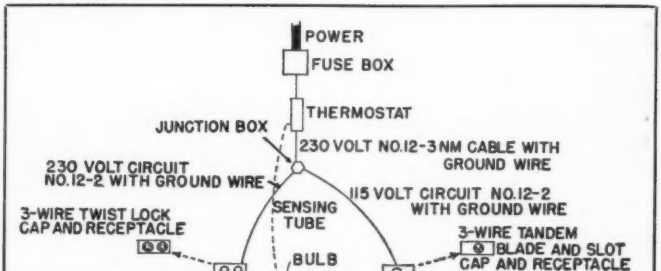

Diagrammatic illustration of a 125-ft. watering trough, showing use of 25-ft. and 50-ft. loops of cable with proper caps and receptacles.

QUESTIONS AND ANSWERS

Solving Moisture Problem in Electrically Heated House

▶Q. *My electrically-heated home is double-insulated, with an aluminum foil moisture barrier. How can I eliminate moisture inside the house? My windows and storm windows drip water.*

R. E. W., Ohio

▶A. This problem can be solved in either of two ways. Small humidistat-controlled exhaust fans in areas of high moisture production such as bathrooms, kitchen and laundry area will eliminate moisture automatically. So will a strategically-placed dehumidifier unit.

Lighted Outdoor Christmas Star

▶Q. *How can I make an outdoor Christmas decoration for my house using a large 5-pointed star with electric lights?*

Miss E. P. M., Kansas

▶A. Build a board framework for your star, the size depending on the distance from which you want the display seen. It should be a minimum of 3 feet across, but could go to 6 or 7 feet if it is some distance from the road. Use outdoor-type Christmas tree lights. Temporarily fasten the individual sockets onto the star framework, but before fastening them down permanently, hold some of them up at night at different spacings to determine the spacing you'll need to see them adequately at a distance. As to colors, either combinations or single colors are fine, but remember, red and white are visible for a much greater distance than blue or green.

Protect Poultry Waterers From Freezing

▶Q. *What can I use to keep water from freezing in my 30-ft. V-trough poultry waterers?*

B. M., Ohio

▶A. Use lengths of plastic-covered electric heating tape, laying the tape in the bottom of the waterers. The tape is flexible, waterproof, economical, durable and extremely easy to use. It is usually readily available at any good electrical or farm supply store. A built-in thermostat makes operation automatic and saves on electricity.

115-Volt Welder Adequate for Farm Shop?

▶Q. *Is a small, 115-volt home shop electric welder adequate for normal farm use?*

G. O., Michigan

▶A. These welders are very limited as to electrical input, and in turn are limited as to what they will do in the shop. A 115-volt welder cannot be expected to penetrate heavier than ¼-inch metal with any degree of satisfaction. Also, size of electrodes is limited to a maximum of ⅛-inch, with smaller diameters recommended for smooth operation. For regular farm repair work, investigate fully the possibility of using a conventional 230-volt farm welder instead.

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Lost: 3,000,000 Pigs

Electric brooding could have saved many of them

3 MILLION PIGS would mean a lot of bacon for the consumer, and plenty of cash in farmers' pockets. But that's how many are lost in this country every year as a result of chilling and crushing. More than 2 million of these die before they are two days old. Brooding has proved effective in reducing these losses.

J. Rutledge Connor, Jr., of "The Rocks" Plantation at Eutawville, South Carolina, says he is raising two pigs more per litter since he installed underfloor brooding in 12 farrowing pens. The veteran swine producer says he also is getting better growth.

The farrowing pens are used for upwards of 60 Yorkshire sows. Connor also likes his new system because it makes the job of handling and caring for sows and pigs much easier.

A 300-watt, thermostat-controlled heating cable buried one inch beneath the surface of the concrete floor warms an 18 x 84-inch area of each farrowing pen. In the construction, a layer of 4 inches of crushed stone was covered with a moisture barrier. On top of this was poured 4 inches of insulating concrete. Then the heating cable, taped to a length of 1-inch poultry mesh, was laid, and 1½ inches of finishing concrete poured on it to form the floor surface. □ □

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in this issue . . .

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When writing to these Manufacturers be sure to mention you saw their advertising in ELECTRICITY ON THE FARM Magazine.

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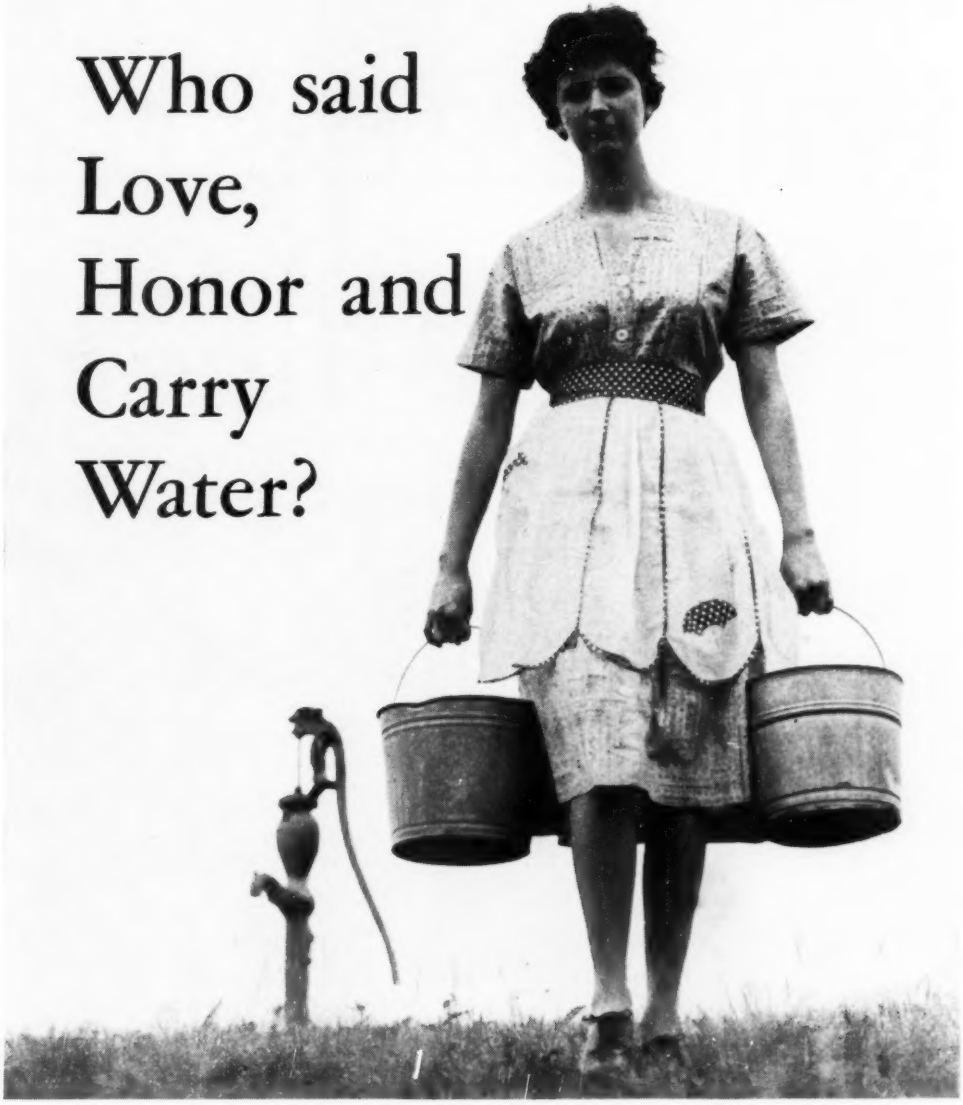

Who wants to carry water? *You don't have to pump and carry water, or rely on an out-dated electric pump that gives only half the water you need. A modern Myers OLYMPIAN Pump carries the water for you. Puts it where you want it, quickly, quietly, economically. See your Authorized Myers Pump Dealer, today. He'll engineer a water supply system tailored exactly to your needs.*

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No doubt about it! Electric heating is your best buy. No wasted heat. No going without. You get just the heat you need because electric heating systems can be adapted to fit your particular needs. And, most important, electric heat is economical to buy, install and operate.

Electric Heat Lamps – For brooding chicks, pigs and lambs. Can be used in the milk house or milking parlor for comfort heating.

Immersion Heaters – Prevents freeze-ups in water bowls and water tanks. Will warm water for poultry and fluid feed rations for young stock. Can be used to warm, melt tar and other liquids which congeal.

Heating Cable – Excellent radiant heat source when buried in the floor of pig and chick brooding houses or the milk house. Can also be used to protect exposed pipes and eaves troughs from freezing.

Space Heaters – Provides comfort heat in the milk house and hard-to-heat spots. Automatically and thermostatically controlled.

Protect your equipment and production. See your farm equipment dealer about electric heat for your farm. For further information about a specific job, call your Farm Service Representative.

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